Remark

Applicants respectfully request reconsideration of this application as amended.

Claims 1, 2, 6, 7, 10, 16 and 42 have been amended. Claims 4, 13, 19 and 27-32 have been

cancelled. Therefore, claims 1-3, 5-12, 14-18, 20-26, 33-54 are present for examination.

Claim Objections

The Examiner has objected to claims 38 and 42 for informalities: Applicants have amended

the claims as the Examiner suggest. Applicants thank the Examiner for this careful reading of the

application and for the suggestions.

35 U.S.C. §101 Rejection

The Examiner has rejected claims 27-32 under 35 U.S.C. §101 because the claimed

invention is directed to non-statutory subject matter. These claims are cancelled without prejudice.

35 U.S.C. §103 Rejection

Tanguay in view of Nackman

The Examiner has rejected claims 1-3, 10-12, 16-18, 25 and 26 under 35 U.S.C.

§103 (a) as being unpatentable over Tanguay, U.S. Patent No. 5,946,488 ("Tanguay") in view of

Nackman, U.S. Patent No. 6,182,281 ("Nackman"). These claims are cancelled or are amended to

contain the significant limitations of Claim 7 discussed below.

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35 U.S.C. §103 Rejection

Tanguay and Nackman in view of Schubert

The Examiner has rejected claims 5-9, 14, 15, 20-24 and 33-54 under 35 U.S.C.

§103 (a) as being unpatentable over Tanguay in view of Nackman and further in view of Schubert,

U.S. Patent No. 6,581,191 ("Schubert").

As stated in the application starting at the bottom of page 2, " one of the significant

disadvantages of current scan insertion tools is that the resulting scan inserted HDL design files

look very different from the chip designer's original design files due to the wholesale changes

made by the preprocessor. Having design files that look so "foreign" to the designer makes

verification and debugging of the designs much more difficult." As further stated at page 10, line

14, " Using this method of scan insertion [as described on page 10] employing context sensitive

macro expansion, a software tool can insert scan commands into an HDL design file in a way that

preserves the text of the original file." This greatly eases verification and debugging.

Referring to the rejection, the Examiner makes a number of points regarding e.g. Claim 7.

Applicants shall attempt to address the most significant points in the order in which they were

presented. First, the Examiner suggests that Tanguay "shows expanding and contracting macro

definitions to make the corresponding tokens visible or hidden, respectively, to a subsequent

process such as compilation."

The cited section of Tanguay recites: "Alternatively, when preprocessed code 164 feeds into

code processing program 210, code processing program 210 performs the same selection functions

as are provided by user input 230. The selection functions may be the first step in some larger

process (for example, compiling the code)." The selection functions of user input 230 are not

specifically spelled out. In this same paragraph, the only functions provided for user input 230 are

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to provide an input to the selective code viewer 220. This would appear to be a viewing function only and there is no suggestion in this section, that expansion or contraction would affect compilation.

While Nackman tracks macro expansion and identifies some macros as persistent, the application for this is to support the multi-pass parsing (Col. 5, line 24) and the result is a persistent whole-program representation (Col. 6, line 37). Objects are either persistent or transient, meaning that they are discarded at the end of an incorporation (Col. 7, line 10). In each pass, source objects that are out-of-date, based on a time stamp, are marked as invalid (Col. 9, line 65) and this "causes all macros defined in that source to be hidden." (Col. 10, line 1). It would seem that objects only persist after they have been fully parsed. The Examiner suggests that Tanguay in light of Nackman teach or suggest token objects with visibility variables so as to enable incremental compilation, but this is not enough.

In sum, Applicants respectfully suggest that Tanguay relates to conventional pre-processing in which macros may be viewed as expanded or contracted. It does not suggest that some macros be hidden from a parser or compiler but only from the viewer on a display device. Nackman relates to multi-pass parsing and the visibility features relate to allowing the code to be parsed in multiple passes. Neither alone nor in combination, do the references suggest employing context sensitive macro expansion, so that a software tool can insert scan commands into an HDL design file in a way that preserves the text of the original file

Reading Claim 7, it, recites "performing scan insertion using a parser by parsing those of the multifaceted tokens that are visible to the parser based on the visibility variable and adding appropriate scan commands." "Visible to the parser based on the visibility variable relates to "marking tokens associated with scan macros as visible to the subsequent parsing process and

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marking other tokens as hidden." Thus the visibility is context sensitive, not in the sense of whether the tokens have been parsed but based on the type of tokens that they are.

Similarly, Claim 7 also recites, "using an output module to generate a scan inserted HDL file containing expanded versions of the macro definitions which are visible to the output module based on the visibility variable and which relate to scan insertion but that omits expanded versions of those that do not relate to scan insertion based on the scan variable." Again, the output module is context sensitive, not user input based. In brief, the visibility variable is used so that scan related macros are parsed and allowed to be modified by the parsing, while macros not related to scan are not modified. Applicants do not find any such ability in the references.

The Examiner has cited Schubert to overcome this limitation of the Tanguay in light of Nackman. Schubert does not appear to relate to "performing scan insertion using a parser," nor to "using an output module to generate a scan inserted HDL file" as recited in Claim 7. Instead Schubert appear to relate to debugging an HDL file. While boundary scan is discussed as problematic (Col. 3, lines 51-62) and scan-chains are discussed as an existing tool (Col. 5, line 7, Col. 14, line 57, etc.), Applicants are unable to find any suggestion that scan be any type of a factor in parsing and output. Applicants submit that even if the instrumentation is analogous to scan, there is no suggestion that scan be treated in any special way. Even if comment objects might include an indicator to indicate whether the comment is an instrumentation directive related to scan, there is no suggestion to include such an indicator nor to apply it to parsing and output.

In sum, even if the references may provide all of the resources that may be required to implement the present invention (Applicants do not concede this point), there is still nothing in the references to suggest the unique treatment of scan related macros by a parser and an output module as recited in Claim 7. The combination proposed by the Examiner may only be derived with

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knowledge of the present claim. There is no suggestion in the references to create this combination. The motivations cited by the Examiner are "so as to persist the program representation" and "so as to differentiate the tokens that are related to scan from other tokens." These motivations are not suggested by the art of record but only by the present application. None of the references suggest that scan should be treated differently, nor any reason for doing so. (Applicants assume that by "persist the program representation" the Examiner is referring to something similar to "insert scan commands into an HDL design file in a way that preserves the text of the original file." Accordingly, Claim 7 is believed to be allowable over the cited references. The remaining claims either include or are amended to include the significant limitations discussed above with respect to Claim 7.

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Conclusion

Applicants respectfully submit that the rejections have been overcome by the amendment and remark, and that the claims as amended are now in condition for allowance. Accordingly, Applicants respectfully request the rejections be withdrawn and the claims as amended be allowed.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.
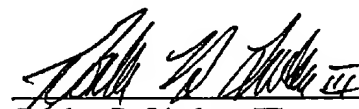
Request for an Extension of Time

Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Charge our Deposit Account.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 4/3/5

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